

What Is Claimed Is:

1. A magnetic disk apparatus comprising:

a magnetic disk holding data by magnetic information on a magnetic recording film;

5 a magnetic head with a slider having a heat element to locally heat said magnetic disk, a write element to apply a magnetic field modulated by an electric signal to an area heated by the heat element, and a read element to convert the magnetic information on said magnetic disk
10 into an electric signal;

an actuator to move said magnetic head along a circular-arc in a radial direction of the magnetic disk; and

an offsetting mechanism that relatively moves a
15 position of the area heated by said heat element and a position of said write element in a width direction of said slider.

2. The magnetic disk apparatus according to claim 1, wherein said offsetting mechanism is a heat area
20 offsetting mechanism to move the area heated by said heat element in the width direction of the slider.

3. The magnetic disk apparatus according to claim 1, wherein said offsetting mechanism is a write element
offsetting mechanism to move said write element in the
25 width direction of the slider.

4. The magnetic disk apparatus according to claim 1, further comprising a servo circuit that controls said offsetting mechanism so as to move the area heated by said heat element and said write element through the same track.

5 5. The magnetic disk apparatus according to claim 4, wherein said servo circuit generates an electric output with an offset amount of said offsetting mechanism corresponding to a yaw angle of said magnetic head and a temperature in the magnetic disk.

10 6. The magnetic disk apparatus according to claim 4, wherein said offsetting mechanism comprises a piezo element and an elastic member deformed by the piezo element, and wherein said servo circuit drives said piezo element to move the area heated by said heat element or
15 said write element in the width direction of said slider.

7. The magnetic disk apparatus according to claim 4, wherein said offsetting mechanism has a voice coil motor, and wherein said servo circuit drives said voice coil motor to move the area heated by said heat element or said
20 write element in the width direction of the slider.

8. The magnetic disk apparatus according to claim 4, wherein said offsetting mechanism has a capacitance actuator, and wherein said servo circuit drives said capacitance actuator to move the area heated by said heat
25 element or said write element in the width direction of

the slider.

9. The magnetic disk apparatus according to claim 4, wherein said offsetting mechanism comprises a heat deformation element and an elastic member deformed by the heat deformation element, and wherein said servo circuit drives said heat deformation element to move the area heated by said heat element or said write element in the width direction of the slider.

10. The magnetic disk apparatus according to claim 4, further comprising a heating light element movable by said offsetting mechanism and a mirror movable by said offsetting mechanism, wherein said servo circuit moves the heating light element and the mirror while keeping an approximately parallel positional relation, to move the position of the area on said magnetic disk heated by said heat element in the width direction of the slider.

11. The magnetic disk apparatus according to claim 4, further comprising a heating light element movable by said offsetting mechanism, a mirror movable by the offsetting mechanism and an object lens movable by said offsetting mechanism, wherein the servo circuit moves the heating light element, the mirror and the object lens while keeping an approximately parallel positional relation, to move the position of the area on said magnetic disk heated by said heat element in the width

direction of the slider.

12. The magnetic disk apparatus according to claim 4, wherein said servo circuit and said offsetting mechanism are connected with at least two drive lines.

5 13. The magnetic disk apparatus according to claim 4, further comprising a conversion table between an output value to said offsetting mechanism and a movement distance of the area heated by said heat element or said write element in the width direction of the slider, wherein said
10 servo circuit refers to said conversion table to determine the output value in accordance with a position of said magnetic head in a radial direction of said magnetic disk.

14. The magnetic disk apparatus according to claim 13, wherein said conversion table is generated by
15 adjusting conversion data by performing writing processing and reading processing, while changing the position of said magnetic head in the radial direction of said magnetic disk, and changing the output value to said offsetting mechanism in each radial position.